

National Aeronautics and Space Administration



Roundup

LYNDON B. JOHNSON SPACE CENTER

August | 2011



Coming to
a center near you:
Advanced Exploration Systems

JSC Director



On the cover:

Artist's concept of possible future exploration programs. This image, produced for NASA by Pat Rawlings (SAIC), is titled "Nearer."



PHOTO COURTESY OF JENNY KNOTTS

Photo of the month:

A curious interloper checks in on the Communications and Public Affairs activities in Building 2 North at Johnson Space Center.



NASA PHOTO

I can't begin to explain how proud I am of our team of space professionals. Despite the uncertainties and distractions with the end of the Space Shuttle Program and termination of the Constellation Program, you have kept your focus on our primary mission of safely flying humans in space. I frequently find myself recalling events of the last 30 years of the Space Shuttle Program, and I firmly believe the nation will look back at the space shuttle as an amazing machine and a special time in our history.

But I'm also excited about the future. The International Space Station is an incredible engineering achievement, and it is also a unique, world-class laboratory or collection of laboratories. The crews are conducting more than a hundred experiments at any given time, and the station will be with us for many years to come.

The Alpha Magnetic Spectrometer, delivered by the STS-134 crew, is designed to prove the existence of antimatter, dark matter and dark energy and promises to revolutionize our understanding of the physics of the universe. But what intrigues me most are the technologies we are perfecting, such as the recycling of air and water and the protection of humans in space, which will enable us to finally leave the Earth's orbit and begin to explore our solar system and the universe beyond.

And our work can translate to day-to-day life, as we recently tallied more than 50 research and technology areas that can benefit the quality of life on Earth. With our space telescopes and deep-space satellites, we have made discoveries we could not have imagined even a couple of decades ago. We have found evidence of water on the moon, Mars and even Mercury, which makes it more common than we ever dreamed. There is also water vapor in the atmosphere of Venus. Water ice is a major constituent of comets and the small bodies of the outer solar system, and water vapor is also found in the giant planets. Where we have water, we have oxygen to breathe and hydrogen for fuel and, of course, the possibility of life as we understand it. If we should someday find proof of even elementary life forms elsewhere in our solar system, then statistically life has to be common throughout the universe.

Just 20 years ago, even though there had been speculation on the existence of extrasolar planets, the only known planets were those orbiting our own sun. Now our telescopes have found hundreds of planets around other stars, proving they are more common than not, and the James Webb Space Telescope and other instruments on the drawing boards will soon enable us to see Earth-like planets.

Humans are meant to explore, and the space shuttle, International Space Station and Orion/Multi-Purpose Crew Vehicle are critically important stepping-stones to our exploration of the universe. We may not have a firm timetable, but we will get there, and you are making it happen. I hope you are as proud of your work as I am.

Mike

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Destination: **Station Ohio**



By Jenny Knotts

What is “Destination: Station?” A trendy restaurant or hot vacation spot? Neither. But you will definitely want to see it for yourself.

Destination: Station is a weeklong series of events designed to promote the International Space Station and its research opportunities in cities and states across the country. The interactive campaign reaches out to audiences such as scientists and researchers, the general public and legislative officials.

Ohio was the inaugural “destination,” and kicked off with a research forum held at the Glenn Research Center in Cleveland. This was an opportunity for people from commercial, academic and government sectors to learn more about using the space station as a national laboratory through presentations from experts such as NASA astronaut Don Pettit and International Space Station Program Scientist Dr. Julie Robinson.

“NASA Glenn has had many experiments on the International Space Station, and we’re pleased to host this research forum to share accomplishments and further research opportunities on the International Space Station National Laboratory,” said Jim Free, deputy director, NASA Glenn Research Center.

“At this forum, researchers are coming to learn about how the space station can be important to their disciplines, how it can lead to

(continued on page 12)



NASA/PHOTO JSC2011E068744

Astronaut Mike Foreman with the Columbus Clippers mascot.

Congratulations, Johnson Space Center Director **Mike Coats**

NASA/STAFFORD JSC2011E046567



Johnson Space Center Director Mike Coats has received the 2010 Executive of the Year Award from the National Management Association (NMA). The association bestows the award each year to a senior executive who exemplifies continued leadership success, a contemporary management style and involvement in his or her community. Coats will be recognized at the NMA’s annual conference in September for his significant professional accomplishments, including his attention to employee well-being, dedication to communicating effectively with team members, program and project development, fostering an inclusive and collaborative environment and establishing employee-based teams to improve aspects of the JSC work environment.

JSC Director Mike Coats is the proud recipient of the NMA 2010 Executive of the Year Award.

Shifting from shuttle to the future

How does the dedicated Johnson Space Center workforce shift its gears after 30 years of legacy-building history with the retirement of the Space Shuttle Program (SSP)? With 135 missions and 37 flights to the International Space Station, the SSP has exemplified NASA's quest for exploration. More than 16,000 people agencywide have dedicated their careers to the success of this program, and their challenge is allowing the shuttle to retire gracefully while NASA takes new steps forward with continued exploration.

Planning for final wheels stop has been under way for several years.



Participants at the Contractor Aerospace Recruiting Expo on June 15 visited with 80 available employers to discuss job opportunities.

"(JSC Director) Mike (Coats) works closely with contractor leadership through the Joint Leadership Team," said JSC Deputy Director Ellen Ochoa. "Senior leadership has really come together to support the affected workforce as it transitions away from the Space Shuttle and Constellation Programs."

Opportunities to move on to new work came early for some employees, but many stayed to shepherd the final SSP mission in July with the same enthusiasm and commitment shown for each flight over these last few decades. The center and its contractor partners made preparations for this major workforce transition by identifying new work or by establishing outplacement support centers for departing employees.

Sadly, JSC has watched many contractor teammates leave JSC—more than 2,000 in the last year alone. The center will continue those good-byes this year as an equal number help us quietly close the door on final SSP activities.

JSC has aided in the transition by sponsoring four virtual job fairs and four live job fairs, with combined results of attracting more than 12,000 job opportunities from almost 200 employers.

"Working closely with Human Resources, multiple Aerospace Transitions Centers (sponsored by Workforce Solutions and the Texas Workforce Commission) are open in the Clear Lake area, helping our people through one-on-one career counseling and job-search services," Ochoa said.

Focusing on job-search assistance, résumé writing, interview skill-building and networking techniques, Workforce Solutions experts have received well-deserved accolades for their efforts.

"We've had many success stories," said JSC Director of Human

Resources Natalie Saiz. "I know of one former contractor who was hired on as a project manager overseas for a large engineering firm, and another who signed on with Edwards Air Force Base in California. Both were so impressed with the Aerospace Transition Centers that they are now reaching back and recruiting additional folks."

Recognizing that it is always difficult to change careers and leave behind a beloved program like shuttle, economic-development affiliations in the area (the Houston-Galveston Area Council and the Bay Area Houston Economic Partnership, to name a few) have made great strides



At the Contractor Aerospace Recruiting Expo held at Clear Falls High School, the event team registered 1,122 job seekers.

in pursuing connections with Houston's other key businesses: energy and health care. Many aerospace teammates have found fulfilling local jobs where their capabilities are welcomed.

Civil service employees are also learning how to shift their careers from the SSP to "something new." With the termination of the Constellation Program, many top-notch civil servants are simultaneously pursuing new endeavors. Working closely with their managers, JSC engineers, project managers and administrative support employees are seeking positions inside the fence that apply their skill set to emerging onsite work. Agency and center senior leadership dedicated much time and effort about a year ago to not only define JSC's core competencies, but also align them with current and future opportunities in Houston. Rotations and reassignments have been successful in mapping employees to available work.

At the time of final wheels stop in July, only two dozen SSP and a handful of Constellation Program civil servants at JSC were still continuing the job search. Many already placed into new positions began them as temporary rotations posted on the Job Opportunity Bank tool.

Workforce transition goes beyond simply reassigning employees from one organization to another. It involves a cultural shift from the previous way of doing business to the new way. In the last year we've chronicled workforce transition-related events on our website at <http://workforcetransition.jsc.nasa.gov>.

Started in October 2009, this website has received approximately half a million hits. JSC will continue to use this mechanism to communicate workforce transition-related events and share new information.

Center Ops keeps Johnson Space Center ticking



By Rachel Kraft

When the thousands of team members at Johnson Space Center arrive to work each day, most don't realize how much their efficiency and effectiveness depends upon their work environment. Behind each team or project's productivity and success is a host of Center Operations (Ops) support that keeps JSC's infrastructure running 24 hours a day.



NASA/HARNETT SSC2009-20A1

A nocturnal NASA ... and one that never sleeps. Center Ops is always operating in the background.

Nearly 800 civil servants and contractors in the directorate monitor systems, perform maintenance and keep facilities on JSC's more than 100 buildings and 1,700 acres secure. The security team routinely checks the site's perimeter, locks and unlocks buildings, prepares facilities for special events, responds to emergencies and performs random vehicle inspections. Concurrently, operations and maintenance staff monitor and maintain all the utilities that run to and from the center, including steam for heating and cooling, potable water, chill water for air conditioning, natural gas and high-voltage electricity, as well as some sewage capabilities.

"What we try to do is keep all that running without you all knowing it," said Jodylane Hartley, a maintenance and operations supervisor. "If we're doing our job right, you don't know we're here."

It's not often an easy job. Many facilities haven't changed much since the early days of human spaceflight, and the Texas heat and the current drought produces extra stress on resources—especially on pipes and air handlers. At all times, the Center Ops team must ensure a timely, coordinated response to any concern. Keeping the center in working condition requires a constant jockeying of tasks as new issues arise.

"We're always having to switch priorities," said JSC Director of Center Ops Joel Walker. "It's a balance."

At night, the maintenance and operations staff frequently executes planned maintenance that limits the service interruptions for the mostly day-shift employees and coordinates quick fixes to sudden interruptions. The Operations Control Center in Building 24 monitors equipment and dispatches technicians, electricians, plumbers and pipe fitters, among others, to tend to an array of breaks and interruptions with facilities. Systems in Buildings 28 and 48 provide additional services to ensure that nothing gets in the way of center and mission support.

Center Ops also plays an important role in reducing JSC's environmental footprint. As security personnel walk through buildings at night, they often turn off lights, coffee makers and other equipment that

have unnecessarily been left on. Walker notes that JSC's pull on energy at night is often as high as 70 percent of what it is during the day.

Center Ops wants to improve sustainability and will recommend ways for JSC to pull less on nonrenewable resources.

"We're going to be working hard on energy use," Walker said. "We could really do a lot better on cutting our usage at night and on the weekends. It's good for us as inhabitants, it's good for (Center Ops) as an operator and it's good for mother Earth."

While planning and preventative maintenance go a long way, many Center Ops team members have a few stories to share about dashing to various alarms and operations malfunctions at all times of day or night to assess service interruptions and coordinate quick fixes to emergencies.

Feral pigs occasionally threaten safety at Ellington Field, and an alligator recently found lurking beneath a car posed a unique threat that security doesn't ordinarily encounter. More than a few impaired drivers have driven through the center gates at night, necessitating immediate attention from security.

"We really take it seriously," said James Kennedy, a lieutenant with the JSC security team. "You never know when you're responding what that might be."

During one Ballunar Liffott Festival, a hot air balloon hit power lines and short-circuited power to approximately half of the site. Operations team members were the first to evaluate the situation and coordinated a quick return to full power within a few hours. A water main outside of Building 20 ruptured earlier in the summer, requiring immediate attention.

"It's pretty amazing how knowledgeable the operators are," said Steve Campbell, deputy director of Center Ops. "They know their systems. Our big goal is to make sure we stay enablers; we're doing pretty good on that."



PHOTO COURTESY OF RACHEL KRAFT

Pressure pumps and a water tank are part of JSC's critical infrastructure that Center Ops keeps running every day of the year.

COMING TO A CENTER NEAR YOU:

Advanced Exploration Systems

Johnson Space Center will no longer be flying like it's 1999. It's 2011, and many exciting changes are in store. Changes in the way we will explore—and with that, changes in how we conduct space business.

Advanced Exploration Systems (AES) is a new umbrella program that will kick off in Fiscal Year 2012. It consists of small, directed projects to rapidly develop and demonstrate prototype systems for human spaceflight. But what it really represents is a shift from how things *used* to be to how things *need* to be for the space program's continued success.

"NASA must learn to develop systems faster," said Matt Ondler, assistant director of Advanced Project Development. "We need to leverage and build off existing capability and not reinvent everything each time. AES is about building and demonstrating hardware and capability with the idea that each iteration builds off the last until you have a mature system that leads to flight systems."

now. And naturally, we flounder because we are never going to be smart enough or know enough to build that vehicle that we have such a pretty cartoon of. And it actually will turn out to not be the right cartoon ... and we'll find that out too late and too many dollars later."

In a fiscal and political environment where exploration initiatives can abruptly change course, getting in too deep can work against the agency on many levels.

"A better approach—the AES approach—is to build prototypes, learn from those prototypes, modify the vision of that ultimate vehicle and repeat that cycle as rapidly as possible until you arrive at real flight systems," Ondler said. "Engineering is about experimentation. It is about trying things, failing (sometimes spectacularly), learning from those failures and trying again. We are building things that are difficult and challenging and often never existed before. There reaches a point where in order to learn more, you have to light the engine, throw the switch, open the valve—or



NASA/PHOTO ISS027E035287

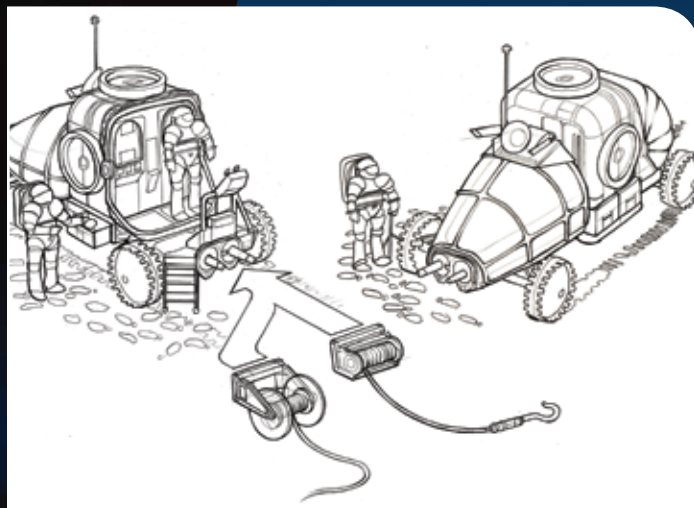
STS-134 Mission Specialist Andrew Feustel is pictured during the mission's first spacewalk, continuing maintenance and construction on the International Space Station. JSC will take part in revolutionizing spacesuit systems under AES.

Of the 64 AES proposals submitted by NASA centers for three-year projects, 23 were selected. Of the 23, JSC will lead 12. Each project also comes with the relatively inexpensive price tag of \$1 to \$3 million.

"We have the ability to control our own destiny," Ondler said. "(JSC) had a lot to do with formulating this program. It's focused on taking humans beyond low-Earth orbit."

Going beyond is where NASA's future lies, and AES will help get us there—faster.

"We have great people that can dream up all kinds of new systems and new architectures for exploring space," Ondler said. "The mistake we often make is we take those 'cartoon' visions and designs and much too early start building plans and writing requirements for how to build that cartoon vehicle a decade from



NASA/PHOTO JSC2008E118886

AES aims to move from "cartoon vehicle" drawings to quicker testing—and failures—by engineers to find what really works in the fastest manner possible.

whatever it happens to be. Debate and analysis can only get you so far in our business. In human spaceflight, I think we have forgotten how integrated systems are developed, and we need to return to an environment of rapid development and testing."

JSC will chart new territory in the following areas: the Morpheus vehicle test bed; Autonomous Landing and Hazard Avoidance Technology; deep space habitat definition and subsystem maturation; Desert Research and Technologies analog mission and simulation; reduced-gravity analog missions; Extravehicular Activity (EVA) suit; EVA portable life support system; suit port; Multi-Mission Space Exploration Vehicle (MMSEV) - mobility; MMSEV - cabin; water processing and waste recovery; logistics reduction and repurposing; and exploration space dosimetry.

An excellent illustration of how the AES methodology will work is in suit port innovations.



By Catherine Ragin Williams

"The suit port has the promise to revolutionize how we do (spacewalks)," Ondler said. "We have built a few prototypes and tested them unpressurized. Next year, under AES, we will demonstrate the suit port in a vacuum chamber. We'll learn from that, make changes and improve the design to a next-generation suit port."

After more testing, AES will be able to conduct a suit port demonstration on the International Space Station and learn from that to make further improvements. In time, this emerging technology could be used on station or another spacecraft.

Other centers will be a part of the excitement, too, with their own AES projects. Some include prospecting for lunar ice (Kennedy Space Center) and even a large-scale, in-flight fire propagation and suppression experiment using an Automated Transfer Vehicle destined for incineration in the atmosphere (Glenn Research Center). Basically, we'll be setting a fire in zero-g to learn how to best control a fire, should one occur in a spacecraft.

AES will provide about 350 full-time JSC civil servant employees a new career direction—one that is necessary now that the Space Shuttle Program is at an end. But as Ondler said, it will also give people some really interesting things to work on.

Better still, the various AES projects, when combined, are the building blocks to exploration beyond low-Earth orbit.

"We have a great opportunity to demonstrate ideas and develop capability," Ondler said. "For example, it is going to be exciting to see a human-in-the-loop vacuum chamber test of a suit port prototype, or see Morpheus flying a high-energy lunar-entry trajectory at White Sands Test Facility, demonstrating autonomous landing and hazard avoidance this year. It will be exciting seeing how energized our workforce becomes and how innovative they will be solving very difficult problems."



NASA/PHOTO JSC2011E040528



NASA/PHOTO JSC2010E170243

Desert Research and Technology Studies, which simulate mission activities in other worlds, is part of the AES umbrella of projects.

Project Morpheus, a concrete example of lean engineering practices, undergoes its fourth tethered test on May 4.

Expedition 28: A sky-high inheritance



By Jonathan Sunny Laxmi

If you had newfound wealth and could spend in the present, invest in your future or even help the world, which would you choose? But what if you want to do all three?

Then you'll have to land a spot on an expedition to the International Space Station.

Long. This study examines the sleep-wake patterns of the crew while aboard the space station. Potential benefits of the experiment include learning when additional measures are needed to minimize the risks of sleep deprivation in orbit. Such a discovery will help the performance of future space explorers, as the quality and duration of slumber impacts

The Space Shuttle *Atlantis* is seen over the Bahamas prior to a perfect docking with the space station on July 10 during Expedition 28. Part of a Russian Progress spacecraft, which is docked to the station, is in the foreground. This is the last time a shuttle will ever visit the orbiting outpost.



NASA/PHOTO ISS028E015805



NASA/CARLA CIOFFI 201106080003HQ

The Soyuz TMA-02M spacecraft launches from the Baikonur Cosmodrome in Kazakhstan on June 7, carrying cosmonaut and Expedition 28 Soyuz commander Sergei Volkov, NASA astronaut Mike Fossum and Japan Aerospace Exploration Agency astronaut Satoshi Furukawa to the International Space Station.

On June 7, the launch pad at the Baikonur Cosmodrome shook as Expedition 28 crew members, NASA's Mike Fossum, the Japan Aerospace Exploration Agency's Satoshi Furukawa and Russia's Sergei Volkov rocketed to the station aboard the Soyuz TMA-02M. After a two-day journey, they joined the rest of the crew already aboard the orbiting lab: Russian Commander Andrey Borisenko, NASA Flight Engineer Ron Garan and Russian Flight Engineer Alexander Samokutyaev.

Expedition 28 will continue world-class research while preparing the station for a future without the payload capability of space shuttles.

The Progress 43 resupply craft docked with the station on June 23 to deliver about two tons of supplies, equipment, fuel and other consumables. In July, the crew received a visit from STS-135, the final space shuttle mission. The voyage provisioned the station with enough supplies, food and spare parts to support the orbiting outpost for a full year. Progress 44 should arrive at station in late summer.

During their stay, the crew members will continue installing infrastructure upgrades to the station's command and control computers and its communications systems. They will work with some 111 experiments involving approximately 200 researchers across a variety of fields, including human life sciences, physical sciences and Earth observation. The crew will also conduct technology demonstrations ranging from recycling to robotics.

One such experiment getting attention is the Sleep-Wake Actigraphy and Light Exposure During Spaceflight-Long investigation, or Sleep-

human health, attitude and the ability to focus—all very important elements of working in the cosmos.

Later this year, crew members will see Dragon, a flight of the new commercial resupply vehicles designed and tested for station support by Space Exploration Technologies Corp., better known as SpaceX. Once the test flights demonstrate commercial spacecraft capabilities, there will be routine cargo missions to the station.

Borisenko, Garan and Samokutyaev are scheduled to land in September as the remaining three take on their positions as Expedition 29 members. Fossum, Furukawa and Volkov are slated to return to Earth in November, passing on their good fortunes to the next expedition crew.



NASA/PHOTO ISS028E014918

NASA astronauts Ron Garan (left) and Mike Fossum, both Expedition 28 flight engineers, remove samples from the General Laboratory Active Cryogenic ISS Experiment Refrigerator and insert in the Minus Eighty Degree Laboratory Freezer for ISS in the Kibo laboratory.

Because **antimatter** does matter



By Catherine Ragin Williams

The Hubble Space Telescope has shown humankind that the universe is a stunning canvas, filled with twinkling stars and colorful, gaseous confections we call nebulae. But there is more to the cosmos that doesn't meet the eye—or the lens of any telescope in existence. That is why NASA now has in its arsenal an instrument designed to expose the invisible for physicists all around the world: the Alpha Magnetic Spectrometer (AMS).

AMS hitched a ride on *Endeavour* to the International Space Station, where it was connected to the orbiting laboratory's truss structure back in May. This specialized detector requires little to no crew intervention, as it will be operated remotely from Earth. Scientists on the ground cannot wait to get their hands on the data this machine is already sending down at a rapid pace—so far 3 billion particles and counting.

"The physics community is very interested in the study of dark matter and antimatter," said NASA AMS Project Manager Trent Martin. "AMS is a huge step in that process. Studies have been done in the past on the ground using particle colliders, but the universe is the ultimate accelerator."

Very little is known about dark matter, though it makes up an estimated 90 percent of the mass in the universe. And while no one knows yet what AMS will uncover, there are high hopes for this instrument.

With AMS, "you can see the charged particles and the cosmic rays, which telescopes cannot see because they're looking for light, whether it be visible or infrared," Martin said.

And while telescopes give us the awe-inspiring photos that drive us to explore further, AMS will decode elements of the universe we have never been able to study before.

AMS is comprised of a two-ton ring of powerful magnets and eight ultrasensitive detectors that work together to track cosmic rays.

"As the particle comes flying through, we measure its mass, we measure its energy, we measure its charge ... and based on all those properties, we can tell you what that particular particle was," Martin said. "The way we measure charge is by essentially putting a large magnet in the path of the particle. If the particle is charged, it will bend in the magnetic field. Antimatter should look like matter as we know it, but has the opposite charge for the different constituents of the atom itself."

With the AMS transmitting data on particles at a rate of about 1 billion particles per month, and currently 20 physicists analyzing those findings, scientists have a wealth of information to start working through.

"It's really difficult to explain to the public exactly what it is you're looking for," Martin said. "One of the questions I do get a lot is why are we doing AMS? The answer I usually give to that is 120 years ago, when they were doing basic research into x-rays, they had no idea what x-rays could do for you in the future. And that's what AMS is doing. AMS is looking out into the universe, trying to figure out what the universe is made of—and potentially you'll find something that you didn't know."



NASA/PHOTO ISS028E016131

This picture, photographed by NASA astronaut Ron Garan during a spacewalk conducted on July 12, shows the International Space Station with Space Shuttle *Atlantis* docked at right and a Russian Soyuz docked to Pirs, below the sun at far left. In the center foreground is the AMS, installed during the STS-134 mission.

The origins of the universe ... we don't know. But with AMS, one day we just may have a little better understanding.

"There's no telling what the limits are going to be with the AMS and its data," Martin said.



PHOTO: NASA, ESA, J. WERTEN (INSTITUTE FOR THEORETICAL ASTROPHYSICS, HEIDELBERG/ASTRONOMICAL OBSERVATORY OF BOLOGNA) AND D. COE (STSC)

While scientists and the public are inspired by what we can see in the universe, there is even more excitement brewing for the antimatter and dark matter that cannot be seen, but must be unveiled by instruments such as the AMS.



Spotlight Sandra K. Moore, Ph.D.

Extravehicular Activity Instructor/Flight Controller - United Space Alliance

Q: Coolest part of your job?

A: The coolest part of my job is working with all the men and women from disciplines center(s)-wide to develop a spacewalk, and then helping conduct the spacewalk while in progress. This entails working with so many different people, including astronauts, engineers of many disciplines, divers, facility personnel, flight leads and flight directors. It is really exciting to be part of such an amazing team of people. I also love all the experiences I have had here at Johnson Space Center training in all of the different facilities with the crew.

Q: Favorite hobbies or interesting things you do away from the office?

A: My favorite hobbies include running, martial arts, traveling and hanging out with my husband and daughter.

Q: What was your first job (not necessarily at NASA, but ever)?

A: My first job was a martial arts instructor at age 11. I had a knack for working with kids, and my instructor "hired" me to help him teach. My first job helped put me through college until I received a NASA fellowship for my doctorate degree. At the end of my college career, I joked that I retired after 17 years at my first job.

Q: If you could trade places with any other person for a week, famous or obscure, living or dead, real or fictional, who would it be?

A: I would not want to go anywhere for long. I truly have been blessed, and I love my life, my work and especially my family! However, I think I would have liked to be Neil Armstrong at the exact moment he stepped out onto the lunar surface ... and known what he was actually thinking and feeling!

Q: What would people be surprised to know about you?

A: I am pretty quiet, but I am a six-time World Karate Association world champion. I love to compete, travel the world and WIN! I was lucky enough to have one of my gold medals flown on 17A. (Thanks Christer and Danny!)

Q: What is your favorite quote or motto?

A: "Go confidently in the direction of your dreams. Live the life you have imagined." - Henry David Thoreau

Q: What would I find in your refrigerator right now?

A: I have a little one, so we have lots of fruit, two types of milk (skim and whole), cheese, meat, yogurt, and of course, ice cream.

Q: Last good book or article you read?

A: I love true crime novels and biographies.

Q: Favorite travel destination (or place you'd love to go if given the opportunity)?

A: My husband and I went to New Zealand and Australia on a six-week honeymoon, and I would love to go back.



PHOTO: SANDRA K. MOORE

NASA/PHOTO JSC2009E157272 NASA/PHOTO JSC2011E057670

Q: Favorite TV show and why?

A: I love true crime. I am a big fan of stories like "City Confidential," "48 Hours Mystery" and "Dateline."

Q: What was your proudest moment?

A: My proudest moments were graduating with my Ph.D., getting married to my amazing husband and becoming a mom to my little girl Lynnea Claire.

Q: When did you first become interested in space, and why?

A: I grew up from age 5 in Kingwood (north Houston). This is Space City. One visit to NASA and I was like, "Sign me up, I want to work here!"

Q: Describe yourself in three words.

A: Determined, hardworking, happy.

Q: What do you hope is NASA's next giant leap?

A: I would like to see NASA set up a base on the moon for experimentation and to press forward with exploration.

WANTED!

Do you know a JSC colleague or team that does something extraordinary on or off the job? Whether it's a unique skill, interesting work, special professional accomplishment, remarkable second career, hobby or volunteerism, your nominee(s) may deserve the spotlight!

The Roundup shines the light on one special person or team each month, chosen from a cross section of the JSC workforce. To suggest "Spotlight" candidates, send your nomination to the JSC Roundup Office mailbox at jsc-roundup@mail.nasa.gov. Please include contact information and a brief description of why your nominee(s) should be considered.

Workin' on their fitness

NASA/MARKOWITZ JSC2011E054429



A group of NASA and contractor retirees and their dependents regularly make the Gilruth their health and fitness haven. These seniors not only work out about three to five times per week at two to three hours per session, they also enjoy other benefits of being at the Gilruth. Getting to meet with other retirees, free group exercise classes and nutritional counseling, fitness assessments and health-related fitness courses are extras that keep them coming back.

Senior exercise workout participants at Johnson Space Center's Health and Fitness Center, from left to right: Charles Wheelwright, Hank Flagg, Kenneth Borkert, Tim White, Liz Jezewski, Robert Frost and Dianne Battaglia.

The All-American meal

Seven astronauts—six from NASA, one from the Japan Aerospace Exploration Agency (JAXA)—and three Russian cosmonauts participate on July 14 in a special meal on the Space Shuttle *Atlantis*' middeck. One of the final meals shared between shuttle and station crews was called “The All-American Meal,” and included apple pie, sausage, grilled chicken and baked beans.

The STS-135 crew consisted of NASA astronauts Chris Ferguson, Doug Hurley, Sandy Magnus and Rex Walheim; the Expedition 28, or station crew members, are JAXA astronaut Satoshi Furukawa, NASA astronauts Ron Garan and Mike Fossum, and Russian cosmonauts Andrey Borisenko, Alexander Samokutyaev and Sergei Volkov.



NASA/PHOTO S135E007808

NASA/PHOTO S135E010788_FULL



Last view

This image of the International Space Station was taken by *Atlantis*' STS-135 crew during a fly around as the shuttle departed the station on July 19. STS-135 was the final shuttle mission to the orbital laboratory.

Roundup

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The Destination: Station museum exhibit at the National Museum of the U.S. Air Force in Dayton, Ohio.

scientific discovery, new technologies for exploration, and how those discoveries can then come back here to benefit life on Earth and make our economy stronger," Robinson said.

Meanwhile, at the National Museum of the U.S. Air Force in Dayton, Johnson Space Center's technicians were busy assembling the new museum exhibit, built specifically for Destination: Station. This 40-foot-by-40-foot exhibit, shaped like a space station module, includes hands-on activities, imagery and audio and visual technology to connect visitors with their place in space, communicating the real and potential impacts of the station on our everyday lives.

"This exhibit is a breathtaking, multimedia look at the International Space Station," said Exhibits Supervisor Paul Miller.

While in Dayton, astronaut Mike Foreman—an Ohio native—gave presentations to the Boonshoft Museum of Discovery and the National Museum of the U.S. Air Force.

The rest of the week was spent in Columbus, partaking in many events for the technical community, as well as the general public. Foreman was on hand at the beginning of the week to give a presentation at the Franklin Park Conservatory, do media interviews and throw out the first pitch at the Columbus Clippers baseball game.

"I hope that Destination: Station heightened the awareness of all the marvelous things going on and all that we are learning from (station)," Foreman said.

Astronaut Dr. Ellen Baker wrapped up the activities in Columbus, starting with a presentation to the staff of the Nationwide Children's Hospital. From there, she inspired children at the Columbus Metropolitan Library by reading them a book and telling them what it's like to be an astronaut. She concluded her visit with a stop at the Center of Science and Industry to talk to the robotics club and museum visitors.

"Through the Destination: Station *Ohio* initiative, NASA has succeeded in exciting and educating a wide audience, ranging from elementary students to research scientists," said Bridget Ziegelaar, manager, International Space Station External Communications.

"Both the exhibit and the outreach activities left a lasting positive impression that will continue to permeate throughout the community, conveying the value of the International Space Station—not only as a marvel of technological achievement, but also as a premier research facility benefiting future exploration and life here on Earth. Engaging with the public is the purest reminder of the special nature of the work we do on space station."

On Sept. 21, Destination: Station will land in Denver—coincidentally, at the same time the Soyuz TMA-22 rocket will bring three Expedition 29 crew members to the orbiting laboratory in space.



Astronaut Dr. Don Pettit speaks at the research forum held at Glenn Research Center.